

- Substitute Specification -

10/533048

TITLE OF THE INVENTION

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[0001] Disk Drive

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CROSS-REFERENCE TO RELATED APPLICATIONS

[0002] This application is a Section 371 of International Application No. PCT/JP2003/013965, filed October 30, 2003, which was published in the Japanese language on May 13, 2004, under International Publication No. WO 2004/040569 A1, the disclosure of which is incorporated herein by reference.

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BACKGROUND OF THE INVENTION

[0003] The present invention relates to a disk drive for reading and/or writing data from/on a disklike data storage medium such as an optical disc or a magnetic disk, which is stored in a cartridge type container.

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[0004] Disklike data storage media are used extensively to store software or data for computer-related equipment, music, video and various other types of information thereon. Data may be read or written with a light beam or magnetism. Examples of data storage media using a light beam include CDs and DVDs. A floppy disk has been known as a data storage medium that used magnetism. Furthermore, some data storage media such as MOs and MDs use both a light beam and magnetism alike.

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[0005] Among other things, a data storage medium of the type allowing the user to rewrite data is housed in a cartridge type storage case to protect the data stored there.

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[0006] Japanese Patent Application Laid-Open Publication No. 9-153264 discloses such a cartridge type storage case (which will be referred to herein as a "disk cartridge"). As shown in FIG. 63, the disk cartridge 100 includes a cartridge body 101 to store a readable and/or rewritable disk 10. The cartridge body 101 has a window 101w on the upper and lower surfaces thereof so as to allow a drive mechanism (such as a spindle motor) for rotating the disk 10 and a read/write head to enter the cartridge body 101 and access the disk 10.

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[0007] The disk cartridge 100 further includes a shutter 103 with a square bottom and a C-cross section in order to cover the window 101w on the upper and lower surfaces of the cartridge body 101 and to protect the side of the disk 10 exposed through the window 101w.

[0008] As shown in FIG. 63, the shutter 103 is movable in the direction pointed by the arrow P. A spring (not shown) applies elastic force to the shutter 103 so as to make the shutter 103 shut the